Notice of Allowability	Application No.	Applicant(s)	
	09/551,246	KRAPF ET AL.	
	Examiner	Art Unit	
	Todd Ingberg	2124	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *7/26/2004*.

2. ☒ The allowed claim(s) is/are *1-146*.

3. ☐ The drawings filed on _ are accepted by the Examiner.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☒ to Paper No./Mail Date *2/2/2004*.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Examiner's Amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The title of the application has been amended as follows:

SHARING COMPONENTS BETWEEN PROGRAMMING LANGUAGES BY USE OF POLYMORPHIC PROXY

2. Authorization for this examiner's amendment was given in a telephone interview with David Feigenbaum on September 2, 2004 for the Examiner's Amendment following this statement.

I. Claim Amendment - Marked Up Copy

Amendment to claims 76, 77, 79, 102, 103 and 146 as follows:

76. (Currently Amended) A system **including instructions stored on a computer readable medium** for modeling a first component of a first functional domain, wherein the first component defines a first concept and includes one or more subcomponents, the system comprising: means for receiving the first component; and means for generating a first model of the first component, including: means for generating, for each subcomponent of the first component, a discrete element of the first model to represent the subcomponent; and means for providing the first model with a property of relationship awareness such that, if a first discrete element or attribute of the first model is changed, the first model is operative to: determine if the first discrete element or attribute has one or more elements and attributes related to the first discrete element or attribute, if the first discrete element or attribute has one or more related elements and attributes, determine whether to change the one or more related elements, and

if it is determined to change one or more related elements and attributes, change such one or more elements and attributes in accordance with the changed first discrete element or attribute.

77. (Currently Amended) A system for modeling **including instructions stored on a computer readable medium** a first component of a first functional domain, wherein the first component defines a first concept and includes one or more subcomponents, the system comprising: a model generator to receive the first component, to generate a first model including:

for each subcomponent of the first component, a discrete element of the first model representing the subcomponent; and one or more model concepts that provide the first model with a property of relationship awareness such that, if a first discrete element or attribute of the first model is changed, the first model is operative to: determine if the first discrete element or attribute has one or more elements and

attributes related to the first discrete element or attribute,

if the first discrete element or attribute has one or more related elements and attributes, determine whether to change the one or more related elements, and

if it is determined to change one or more related elements and attributes, change such one or more elements and attributes in accordance with the changed first discrete element or attribute.

79. (Currently Amended) A method **executed from instructions stored on a computer readable medium** of transforming a first component of a first domain to a proxy component of a second domain, wherein the first component has a type and defines a first concept, the method comprising acts of:

(a) analyzing the first component to determine its type; and

(b) transforming the first component into the proxy component in accordance with the determined type, wherein the proxy component defines at least the concept defined by the first component.

102. (Currently Amended) A system **including instructions stored on a computer readable medium** for transforming a first component of a first domain to a proxy component of a second domain, wherein the first component has a type and defines a first concept, the system comprising:

means for analyzing determining type of the first component to determine its type; and

means for transforming the first component into the proxy component in accordance with the determined type, wherein the proxy component defines at least the concept defined by the first component.

103. (Currently Amended) A system **including instructions stored on a computer readable medium** for transforming a first component of a first domain to a proxy component of a second domain, wherein the first component has a type and defines a first concept, the system comprising:

a component transformer to receive as input the first component, to analyze the first component to determine its type, to transform the first component into the proxy component in accordance with the determined type, and to output the proxy component,

wherein the proxy component defines at least the concept defined by the first component.

146. (Currently Amended) A method **executing on a computer** comprising, for a program component expressed in a first domain, the component being of any arbitrary type belonging to a set of different types of program components expressed in the first domain, the type having first relationships to other types in the set, using a predefined mapping of relationships between types in the set to relationships between types in a second domain to transform the first component to a second component in the second domain, the second component being of a type belonging to a set of different types of program components in the second domain, the type having relationships to components of other types in the second domain that closely correspond to the first relationships.

II. Clean Copy of Amended Claims

76. A system including instructions stored on a computer readable medium for modeling a first component of a first functional domain, wherein the first component defines a first concept and includes one or more subcomponents, the system comprising: means for receiving the first component; and means for generating a first model of the first component, including: means for generating, for each subcomponent of the first component, a discrete element of the first model to represent the subcomponent; and means for providing the first model with a property of relationship awareness such that, if a first discrete element or attribute of the first model is changed, the first model is operative to: determine if the first discrete element or attribute has one or more elements and attributes related to the first discrete element or attribute, if the first discrete element or attribute has one or more related elements and attributes, determine whether to change the one or more related elements, and if it is determined to change one or more related elements and attributes, change such one or more elements and attributes in accordance with the changed first discrete element or attribute.

77. A system for modeling including instructions stored on a computer readable medium a first component of a first functional domain, wherein the first component defines a first concept and includes one or more subcomponents, the system comprising: a model generator to receive the first component, to generate a first model including: for each subcomponent of the first component, a discrete element of the first model representing the subcomponent; and one or more model concepts that provide the first model with a property of relationship awareness such that, if a first discrete element or attribute of the first model is changed, the first model is operative to: determine if the first discrete element or attribute has one or more elements and attributes related to the first discrete element or attribute, if the first discrete element or attribute has one or more related elements and attributes, determine whether to change the one or more related elements, and
if it is determined to change one or more related elements and attributes, change such one or more elements and attributes in accordance with the changed first discrete element or attribute.

79. A method executed from instructions stored on a computer readable medium of transforming a first component of a first domain to a proxy component of a second domain,

wherein the first component has a type and defines a first concept, the method comprising acts of:
(a) analyzing the first component to determine its type; and
(b) transforming the first component into the proxy component in accordance with the determined type, wherein the proxy component defines at least the concept defined by the first component.

102. A system including instructions stored on a computer readable medium for transforming a first component of a first domain to a proxy component of a second domain, wherein the first component has a type and defines a first concept, the system comprising: means for analyzing determining type of the first component to determine its type; and means for transforming the first component into the proxy component in accordance with the determined type, wherein the proxy component defines at least the concept defined by the first component.

103. A system including instructions stored on a computer readable medium for transforming a first component of a first domain to a proxy component of a second domain, wherein the first component has a type and defines a first concept, the system comprising: a component transformer to receive as input the first component, to analyze the first component to determine its type, to transform the first component into the proxy component in accordance with the determined type, and to output the proxy component, wherein the proxy component defines at least the concept defined by the first component.

146. A method executing on a computer comprising, for a program component expressed in a first domain, the component being of any arbitrary type belonging to a set of different types of program components expressed in the first domain, the type having first relationships to other types in the set, using a predefined mapping of relationships between types in the set to relationships between types in a second domain to transform the first component to a second component in the second domain, the second component being of a type belonging to a set of different types of program components in the second domain, the type having relationships to components of other types in the second domain that closely correspond to the first relationships.

Reasons For Allowance

3. The following is an examiner's statement of reasons for allowance:

Claim 1

MFC anticipates in a computing system, a method for tracking user interaction with computer readable code, said method comprising: monitoring user interaction with computer readable code (MFC, pages 821 - 822, Event Notifications - event firing and the ability to detect such an event); recording information about the type of the user interaction (MFC, Control Proxy classes - Containers - pages 809-814) contain; if the user interaction relates to a point of focus in a first position in the computer readable code, then recording information about said first position; if the point of focus changes from said first position to a second position in the computer readable code(MFC, pages 821 - 822, Event Notifications - event firing and the ability to detect such an event), then determining if the content of the point of focus in said first position has changed(MFC, pages 821 - 822, Event Notifications - event firing and the ability to detect such an event); and if the content of the point of focus in said first position has changed(MFC, pages821 - 822, Event Notifications - event firing and the ability to detect such an event), then recording information about the content of the point of focus in said first position (MFC, Control Proxy classes - Containers - pages 809-814).

Claim 1 has been amended for clarity and to recite that the proxy component is generated by analyzing the first component to determine the type of that component. The MFC reference neither discloses nor suggests "analyzing the first component to determine its type." In the MFC reference, the proxy component is generated based simply, on a single method of mapping user level events in ActiveX controls to notification endpoints within a Visual C++ program, duplicating the inputs and outputs of the ActiveX control.

In a particular example described in the applicant's specification, by contrast, a component resides in a first programming domain, and is not necessarily intended to be used in any other programming domain. To generate a proxy allowing the use of that component in a different programming domain, the process analyzes specific attributes of the component, such as "the type of the first component . .. For example, if the first domain is the Java programming language, then the first component may be identified as a Java class or a Java interface." (p. 68, 11. 16-18) Based on this analysis, the process selects the "appropriate transformation to be performed on the first component...[which] often depends on the type of the component." (p. 68, 11. 20-21) That transformation is applied "to transform [the] component of the first domain to a proxy component of [the] second domain." (p. 71,11. 1-2) To assure that the concept is accurately represented, the transformation produces a proxy "that adhere[s] to the syntax of the second domain and [has] a semantic usability in the second domain closely corresponding to the semantic usability of the first component in the first domain." (p. 71, 11. 5-7) That is, the proxy has attributes in the second domain that closely correspond to the attributes of the component in the first domain. This allows full use to be made of the component, via the proxy, within the second domain, as if the component were: natively available in that domain, without any

requirement that that component be desired for such cross-domain use. A wide variety of other examples are within the scope of the claims.

Claims 76-79, 102-104, and the dependent claims are patentable for at least the same or similar reasons.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Drawings

4. As noted in First Action On Merit (FAOM) February 2, 2004, new formal drawings are required.

Correspondence Information

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Todd Ingberg** whose telephone number is (703) 305-9775. The examiner can normally be reached during the following hours:

Monday	Tuesday	Wednesday	Thursday	Friday
6:15 – 1:30	6:15- 3:45	6:15 – 4:45	6:15-3:45	6:15-130

This schedule began December 1, 2003 and is subject to change.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Kakali Chaki** can be reached on (703) 305-9662. Please, note that as of August 4, 2003 the **FAX number** changed for the organization where this application or proceeding is assigned is **(703) 872-9306**.

Also, be advised the United States Patent Office **new address** is

Post Office Box 1450

Alexandria, Virginia 22313-1450

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9700.

Special Notice

6. Please, Note the Examiner's telephone number will change in October when the Art Unit moves to the new location. The Examiner's new telephone number will be as follows:

(571) 272-3723

Todd Ingberg
Primary Examiner
Art Unit 2124
September 2, 2004